

Application No.: 10/049,192
Filed: 06 June 2002
Art Unit: 1648

IN THE CLAIMS:

1-39: Cancelled.

40. (Withdrawn and currently amended): An attenuated human rotavirus population, comprising a single variant or substantially a single variant, said variant defined by a nucleotide sequence encoding at least one of the major viral proteins chosen from the group of: [designated as] VP4 and VP7.

41. (Withdrawn): A rotavirus population according to claim 40 which is a cloned strain.

42. (Withdrawn): A rotavirus population according to claim 40 which is derived from a human rotavirus infection.

43. (Withdrawn): A rotavirus population according to claim 40 which replicates in and is excreted by humans.

44. (Withdrawn and currently amended): A rotavirus population according to claim 40 in which the substantially single variant is a variant in which the VP4 gene comprises [a nucleotide sequence comprising] at least one substitution chosen from the group of [of the following]: an adenine base (A) at position 788₁; an adenine base (A) at position 802₁; and a thymine base (T) at position 501 from the start codon.

45. (Withdrawn and currently amended): A rotavirus population according to claim 44 in which the VP4 gene comprises the [a] nucleotide sequence set forth in SEQ ID NO:1 [comprising an adenine base (A) at positions 788 and 802 and a thymine base (T) at position 501 from the start codon].

46. (Withdrawn and currently amended): A rotavirus population according to claim 40 in which the substantially single variant is a variant in which the VP7 gene comprises [a nucleotide sequence comprising] at least one substitution chosen from the group of [of the following]: a thymine (T) at position 605₁; an adenine (A) at position 897₁; and a guanine (G) at position 897 from the start codon.

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47. (Withdrawn and currently amended): A rotavirus population according to claim 46 in which the VP7 gene comprises the [a] nucleotide sequence set forth in SEQ ID NO:2 [comprising a thymine (T) at position 605 and an adenine (A) or a guanine (G) at position 897 from the start codon].

48. (Withdrawn and currently amended): A rotavirus population according to claim 40 [44] in which the VP4 gene comprises the [a] nucleotide sequence set forth in SEQ ID NO:1, [comprising an adenine (A) at positions 788 and 802 and a thymine (T) at position 501 from the start codon;] and the VP7 gene comprises the [a] nucleotide sequence set forth in SEQ ID NO:2 [comprising a thymine (T) at position 605 and an adenine (A) at position 897 from the start codon].

49. (Withdrawn and amended): A rotavirus which comprises a nucleotide sequence encoding a VP4 protein wherein the nucleotide sequence is the nucleotide sequence set forth in SEQ ID NO:1 [is as shown in Figure 1], and [and/or] a nucleotide sequence encoding a VP7 protein [wherein the nucleotide sequence is as shown in Figure 2].

50. (Withdrawn): A rotavirus population according to claim 40, designated as P43 and deposited under accession number ECACC 99081301.

51. (Withdrawn): A rotavirus variant designated P43 and deposited with the ECACC under accession number 99081301, rotavirus progeny and immunologically active derivatives thereof and materials obtained therefrom.

52. (Withdrawn): A rotavirus reassortant comprising at least one antigen or at least one segment of the rotavirus variant P43 of claim 50.

53. (Withdrawn): A method of producing a purified human rotavirus population comprising a substantially single variant, the method comprising:
passaging a rotavirus preparation on a suitable cell line;
optionally selecting homogeneous culture using the steps of either:
limit dilution; or
individual plaque isolation; and

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checking for the presence of a substantially single variant by sequencing an appropriate region of the VP4 and/or VP7 gene sequence.

54. (Withdrawn): A method according to claim 53 in which the rotavirus preparation is passaged on AGMK cells.

55. (Withdrawn): A method according to claim 53 in which the rotavirus preparation has the characteristics of an 89-12 strain or derivative thereof.

56. (Withdrawn): A method according to claim 53, which comprises the additional step of ether treatment to remove adventitious ether-sensitive contaminating agents.

57. (Currently amended): A vaccine composition comprising a live attenuated human rotavirus population virus, comprising a single variant or substantially a single variant, said variant defined by a nucleotide sequence encoding at least one of the major viral proteins designated as VP4 and VP7 [virus according to claim 40] admixed with a suitable pharmaceutical carrier or adjuvant.

58. (Previously presented): A vaccine composition according to claim 57 adapted for oral administration.

59. (Previously presented): A vaccine composition according to claim 58 in which the live attenuated virus is formulated with an antacid composition.

60. (Previously presented): A vaccine composition according to claim 59, wherein the antacid composition comprises an organic antacid.

61. (Previously presented): A vaccine composition according to claim 60, wherein the antacid is sodium citrate.

62. (Previously presented): A vaccine composition according to claim 59, wherein the antacid composition comprises an inorganic antacid.

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63. (Previously presented): A vaccine composition according to claim 62, wherein the antacid is aluminium hydroxide.

64. (Previously presented): A vaccine composition according to claim 62, wherein the antacid is calcium carbonate.

65. (Previously presented): A vaccine composition according to claim 64, which further comprises a viscous agent.

66. (Previously presented): A vaccine composition according [accorsing] to claim 65, wherein the viscous agent is xanthane gum.

67. (Previously presented): A vaccine composition according to claim 64, wherein the live attenuated virus is formulated with calcium carbonate and xanthane gum and reconstituted with aqueous solution.

68. (Previously presented): A vaccine composition according to claim 59, wherein the live attenuated virus is formulated with the antacid composition and lyophilised in a blister pack.

69. (Previously presented): A vaccine composition according to claim 57, wherein the virus is in lyophilised form.

70. (Previously presented): A vaccine composition according to claim 69, wherein the live attenuated virus and the antacid composition are present in separate containers for formulation as a liquid vaccine composition prior to administration.

71. (Previously presented): A vaccine composition according to claim 69, wherein the live attenuated virus and the antacid composition are present in the same container for formulation as a lyophilised vaccine composition to be reconstituted with aqueous solution prior to administration.

72. (Cancelled)

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73. (Currently amended): A vaccine composition according to claim 69 [72], wherein the composition is in the form of a quick dissolving tablet for immediate dissolution when placed on the tongue.

74. (Currently amended): A vaccine composition according to claim 69 [72] comprising a lyophilised live attenuated rotavirus admixed with an inorganic antacid such as calcium carbonate and a viscous agent such as xanthane gum.

75. (Previously presented): A vaccine composition according to claim 74, wherein the attenuated virus and the antacid composition are present in separate containers for formulation as a liquid vaccine composition prior to administration.

76. (Previously presented): A vaccine composition according to claim 74, wherein the attenuated virus and the antacid composition are formulated in the same container, as a lyophilised vaccine composition to be reconstituted with aqueous solution prior to administration.

77. (Withdrawn): A method of manufacture of a rotavirus vaccine comprising admixing a lyophilised live attenuated human rotavirus with an antacid and a viscous agent.

78. (Withdrawn): A method of preventing rotavirus infection in humans by administering to a human subject in need thereof an effective amount of a vaccine according to claim 57.

Please add the following new claims:

79. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 57, which is a cloned strain.

80. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 57, which is derived from a human rotavirus infection.

81. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 57, which replicates in, and is excreted by, humans.

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82. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 57 in which the substantially single variant is a variant in which the VP4 gene comprises at least one substitution chosen from the group of: an adenine base (A) at position 788; an adenine base (A) at position 802; and a thymine base (T) at position 501 from the start codon.

83. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 82 in which the VP4 gene comprises the nucleotide sequence set forth in SEQ ID NO:1.

84. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 57 in which the substantially single variant is a variant in which the VP7 gene comprises at least one substitution chosen from the group of: a thymine (T) at position 605, an adenine (A) at position 897 and a guanine (G) at position 897 from the start codon.

85. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 84 in which the VP7 gene comprises the nucleotide sequence set forth in SEQ ID NO:2.

86. (New): A vaccine composition comprising a live attenuated rotavirus population according to claim 57 in which the VP4 gene comprises the nucleotide sequence set forth in SEQ ID NO:1, and the VP7 gene comprises a nucleotide sequence set forth in SEQ ID NO:2.

87. (New): A vaccine composition comprising a live attenuated rotavirus which comprises a nucleotide sequence encoding a VP4 protein wherein said VP4-encoding nucleotide sequence comprises the nucleotide sequence set forth in SEQ ID NO:1, and a nucleotide sequence encoding a VP7 protein.

88. (New): A vaccine composition comprising a live attenuated rotavirus which comprises a nucleotide sequence encoding a VP4 protein and a nucleotide sequence encoding a VP7 protein wherein said VP7-encoding nucleotide sequence is set forth in SEQ ID NO:2.